

a conductive material disposed in the recessed channel and forming a working electrode.

21. (Amended) The electrochemical sensor of claim [1] 103, further comprising an electron transfer agent disposed on the working electrode to transfer electrons between the working electrode and the analyte.

30. (Amended) The electrochemical sensor of claim [1] 103, wherein the electrochemical sensor is configured for *in vivo* operation.

31. (Amended) The electrochemical sensor of claim [1] 103, wherein the electrochemical sensor is configured for *in vitro* operation.

32. (Amended) The electrochemical sensor of claim [1] 103, wherein the substrate is a polymeric material.

33. (Amended) The electrochemical sensor of claim [1] 103, wherein the substrate is flexible.

34. (Amended) The electrochemical sensor of claim [1] 103, wherein the substrate is planar.

35. (Amended) The electrochemical sensor of claim [1] 103, wherein the surface of the substrate comprises a wide portion and a narrow portion, the narrow portion being configured for implantation into a patient.

37. (Amended) The electrochemical sensor of claim [1] 103, wherein the conductive material comprises a metal.

38. (Amended) The electrochemical sensor of claim [1] 103, wherein the conductive material comprises carbon.

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22. (Amended) The electrochemical sensor of claim [1] ~~92~~, further comprising a catalyst for catalyzing a reaction of an analyte, the catalyst being disposed proximate to the working electrode.

39. 33. (Amended) The electrochemical sensor of claim [1] ~~103~~, further comprising a biocompatible coating disposed over at least a portion of the working electrode.

40. 34. (Amended) The electrochemical sensor of claim [1] ~~103~~, further comprising a mass transport limiting layer disposed over at least a portion of the working electrode to limit transport of an analyte to the working electrode.

2. 36. (Amended) The electrochemical sensor of claim [34] ~~38~~, wherein a rate of permeation of the analyte through the mass transport limiting layer varies by no more than 1% per °C for temperatures ranging from 30°C to 40°C.

3. 37. (Amended) The electrochemical sensor of claim [34] ~~38~~, wherein the mass transport limiting layer comprises a membrane having a plurality of track etched pores.

4. 38. (Amended) The electrochemical sensor of claim [34] ~~38~~, wherein the mass transport limiting layer absorbs 5 wt.% or less of water at 37°C when in contact with interstitial fluid for 24 hours.

41. 48. (Amended) The electrochemical sensor of claim [1] ~~103~~, further comprising a temperature probe disposed on the substrate, the temperature probe having a plurality of spaced-apart probe leads and a temperature-dependent element in contact with the spaced-apart probe leads, the temperature-dependent element comprising a material having a temperature-dependent characteristic that produces a change in a signal of the temperature probe in response to a change in temperature.

47. 54. (Amended) The electrochemical sensor of claim [1] ~~103~~, wherein the analyte is glucose.

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55. (Amended) The electrochemical sensor of claim [1] 103, wherein the electrochemical sensor is configured for implantation into an animal and an anticlotting agent is disposed on a portion of the substrate that is configured for implantation.

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56. (Amended) The electrochemical sensor of claim [1] 92, wherein the substrate is flexible.

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57. (Amended) The electrochemical sensor of claim [1] 103, further comprising laccase disposed proximate to the working electrode to monitor a level of oxygen in a fluid.

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58. (Amended) [An] The electrochemical sensor of claim 1, wherein the electrochemical sensor comprises, comprising:  
a substrate;  
a plurality of recessed channels formed in at least one surface of the substrate; and  
a conductive material disposed in each of the recessed channels, the conductive material in at least one of the recessed channels forming a working electrode.

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68. (Amended) [The] An implantable electrochemical sensor strip [of claim 69] comprising:

a substrate;  
[wherein the] a reference electrode [is formed] disposed on a first surface of the substrate; and  
[the] a working electrode [is formed] disposed on a second surface of the substrate, the first and second surfaces being opposing surfaces of the substrate.

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74. (Amended) A method of determining a level of an analyte in a fluid, the method comprising:  
contacting the fluid with [an] the electrochemical sensor of claim 103, the sensor comprising a substrate, a recessed channel formed in the substrate, and conductive material deposited in the recessed channel to form a working electrode];

Q9 generating an electrical signal in the sensor in response to the presence of the analyte; and  
determining a level of the analyte from the electrical signal.

Q10 81. (Amended) An electrochemical sensor for determining a level of an analyte in a fluid, comprising:  
a substrate;  
[a recessed channel formed in a surface of the substrate;]  
a conductive material disposed [in the recessed channel] on the substrate and forming a working electrode; and  
a catalyst disposed proximally to the working electrode to catalyze a reaction of the analyte resulting in a change in a level of a second compound;  
wherein the electrochemical sensor is responsive to the level of the second compound in the fluid.

Q11 22. 91. (Amended) The electrochemical sensor of claim 92, wherein the working electrode is disposed in a recessed channel formed on a surface of the substrate.

Q12 38. 122. (Amended) An electrochemical sensor, comprising:  
a substrate;  
a conductive material disposed on the substrate to form a working electrode; [and] catalyst dispersed in the conductive material, the catalyst catalyzing a reaction of the analyte to generate a signal at the working electrode; and  
a binder dispersed in the conductive material, wherein the binder is cured so that the catalyst and conductive material are non-leachably disposed on the substrate.

Please add claim 127.

Q13 29. 127. (New) An implantable electrochemical sensor, comprising:  
a substrate having a longitudinal axis with a narrow distal region that is configured and arranged for implantation into an animal and a wider proximal region that extends in a single lateral direction from the longitudinal axis;